SES-TECH

June 6, 2005
SES-TECH-05-0078

Mr. Bipin Patel
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division
Code OPCE.BP
1220 Pacific Highway
San Diego, CA 92132-5190

Subject: **Final Letter Work Plan for Groundwater Sampling at UST Site 21565, Marine Corps Base Camp Pendleton, California**

Reference: NFECSW SES-TECH Contract No. N68711-04-D-1104, Contract Order No. 0004

Dear Bipin,

Attached is the Final Letter Work Plan (Plan) for Groundwater Sampling at UST Site 21565, MCB Camp Pendleton. Two copies of the Plan have been forwarded to Chet, one for his files and one for submittal to the RWQCB.

If you have any questions or comments, please call.

Sincerely,

Mark Cutler, PG, CHG
Project Manager

Attachment:
cc: Mr. Chet Storrs MCB Camp Pendleton AC/S ES (w/2 attachments)

Southwest Division
Naval Facilities Engineering Command
Contracts Department
1220 Pacific Highway, Building 127, Room 112
San Diego, California 92132-5190

CONTRACT NO. N68711-04-D-1104
CTO NO. 0004

FINAL
LETTER WORK PLAN
GROUNDWATER SAMPLING AT UST SITE 21565
MARINE CORPS BASE CAMP PENDLETON, CALIFORNIA
REVISION 0
JUNE 6, 2005

DCN: SES-TECH-05-0078

Prepared by:

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for Tania Turpijn-Keasler
Project Scientist

Mark Cutler, P.G.
Project Manager

1. Introduction

This Letter Work Plan (Plan) describes the proposed field activities for collection of groundwater samples from three locations at Underground Storage Tank Site (UST) Site 21565 at Marine Corps Base Camp Pendleton (MCB) Camp Pendleton, California. The work is being completed based on comments received from the Regional Water Quality Control Board, San Diego Region, in a letter dated November 18, 2004 (reference: SMC:50-3426.05:peurp). This Plan was prepared by SES-TECH, a joint venture between Sealaska Environmental Services LLC and Tetra Tech FW, Inc., under the Naval Facilities Engineering Command, Southwest Division (NFECSW) Indefinite Delivery/Indefinite Quantity Environmental Remediation Contract No. N68711-04-D-1104, Contract Task Order No. 0004.

UST Site 21565 is regulated under the California Code of Regulations, Title 23, Division3, Chapter 16, Article 11, and the California Health and Safety Code, Sections 25187 through 25189, which required those responsible for the release of a hazardous substance to take all necessary corrective actions to remedy the release. The document guiding groundwater sampling at the Site is the San Diego County Site Assessment and Mitigation Manual 2005 [Department of Environmental Health (DEH), 2005]

UST Site 21565 is located in 21Area of MCB Camp Pendleton, adjacent to Boat Basin Road along the edge of the Camp Pendleton Boat Basin (Figure 1). The Site was associated with former Building 21565, which has since been demolished and a new building, Building 21068, has been constructed over the footprint of the former building. Site 21565 formerly contained a diesel UST that leaked. Excavation of two areas of contaminated soil was previously conducted, however, prior to granting closure the RWQCB has requested that additional groundwater samples be collected.

2. Scope of Work

The scope of work includes collecting groundwater samples from the downgradient direction of UST Site 21565 (towards the Boat Basin) at three locations (Figure 2) using push-type groundwater sampling equipment or temporary wells. Direct access to UST Site 21565 has not been available since former Building 21565 was demolished and Building 210568 (a much larger building) was constructed in the area (Figure 2).

Before field activities begin, the appropriate permit from the County of San Diego Department of Environmental Health will be obtained, and the nature and schedule of work will be discussed with all appropriate MCB Camp Pendleton and Navy personnel. A geophysical survey will be conducted at each proposed sampling location using ground penetrating radar and/or electromagnetic induction instruments to identify underground utilities. The first 5 feet of each boring will also be hand augered in order to determine that underground utilities do not exist. In addition, the Base Utility Locator Service and Underground Service Alert will be requested. The

locations of suspected underground utilities will be marked with appropriately colored paints. Overhead utilities will also be identified.

Groundwater at the site is estimated to be approximately 8 feet below ground surface (bgs). Drilling will proceed with either a direct push rig or hollow stem auger rig to approximately 10 feet bgs. If a direct push rig is used the drive casing will be retracted after reaching total depth to expose an inlet screen to allow water to enter the casing. If a hollow stem auger rig is used, a temporary well will be installed with a few feet of screen at total depth. Once water has entered the drive casing or the temporary well, a sample will be collected using a disposable bailer. After sampling, each boring will be backfilled with bentonite grout, or equivalent, and the ground surface will be restored to its original condition.

All soil cuttings (if hollow stem auger drilling is used) and decontamination water will be stored in DOT-approved 55-gallon drums. All drums will be labeled once accumulation has begun and stored on site away from high use and high traffic areas. Investigation derived waste will be sampled and analyzed, as necessary, and transported with appropriate waste manifest documentation to an appropriate off-site disposal and/or treatment facility. All wastes will be disposed of within 60 days from the start of accumulation.

Groundwater from each location, plus one duplicate, will be analyzed for total petroleum hydrocarbons quantified as diesel (TPH-d) using U.S. Environmental Protection Agency (EPA) Method 8015B, volatile organic compounds (VOCs) using EPA Method 8260B, and polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270C Selective Ion Monitoring (SIM). EPA Method 8310 will be used for PAHs if EPA 8270C SIM reporting limits cannot support established action levels of 0.2 µg/L for benzo(a)pyrene and 1 µg/L for phenanthrene.

Sample containers, preservatives and holding times will be in accordance with EPA requirements. The subcontractor laboratory will provide sample containers that are certified pre-cleaned according to EPA protocols. The laboratory will guarantee the purity of preservation chemicals. All down-hole equipment will be decontaminated by steam cleaning after completion of sample collection at each location. Samples will be placed in coolers on ice and will be transported via courier to a Navy certified laboratory on the day of collection.

All sample data will be validated by an independent data validation company. Data will be validated at 90 percent EPA Level III and 10 percent EPA Level IV. The validation will be in accordance with the *Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99-008* (EPA, 1999), *Environmental Work Instruction (EWI) #1, 3EN2.1, Chemical Data Validation* (NFECSW, 2001), and the QC criteria specified in the referenced methods. Data not meeting method specifications will be flagged as estimated ("J") or rejected ("R").

Once final sample results have been received a final report will be prepared and all data will be submitted in the State Water Resources Control Board UST program format for inclusion in Geotracker.

3. List of References

Naval Facilities Engineering Command, Southwest Division (NFECSW). 2001. *Environmental Work Instruction (EWI) #1, 3EN2.1, Chemical Data Validation.* November.

San Diego County Department of Environmental Health (DEH). 2005. *Site Assessment and Mitigation Manual 2005.*

U.S. Environmental Protection Agency (EPA). 1999. *National Functional Guidelines for Organic Data Review, EPA 540/R-99-008. Contract Laboratory Program*. October.

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DATE: 05/30/05	REV: REVISION 0		CTO: #004	05007601.DWG

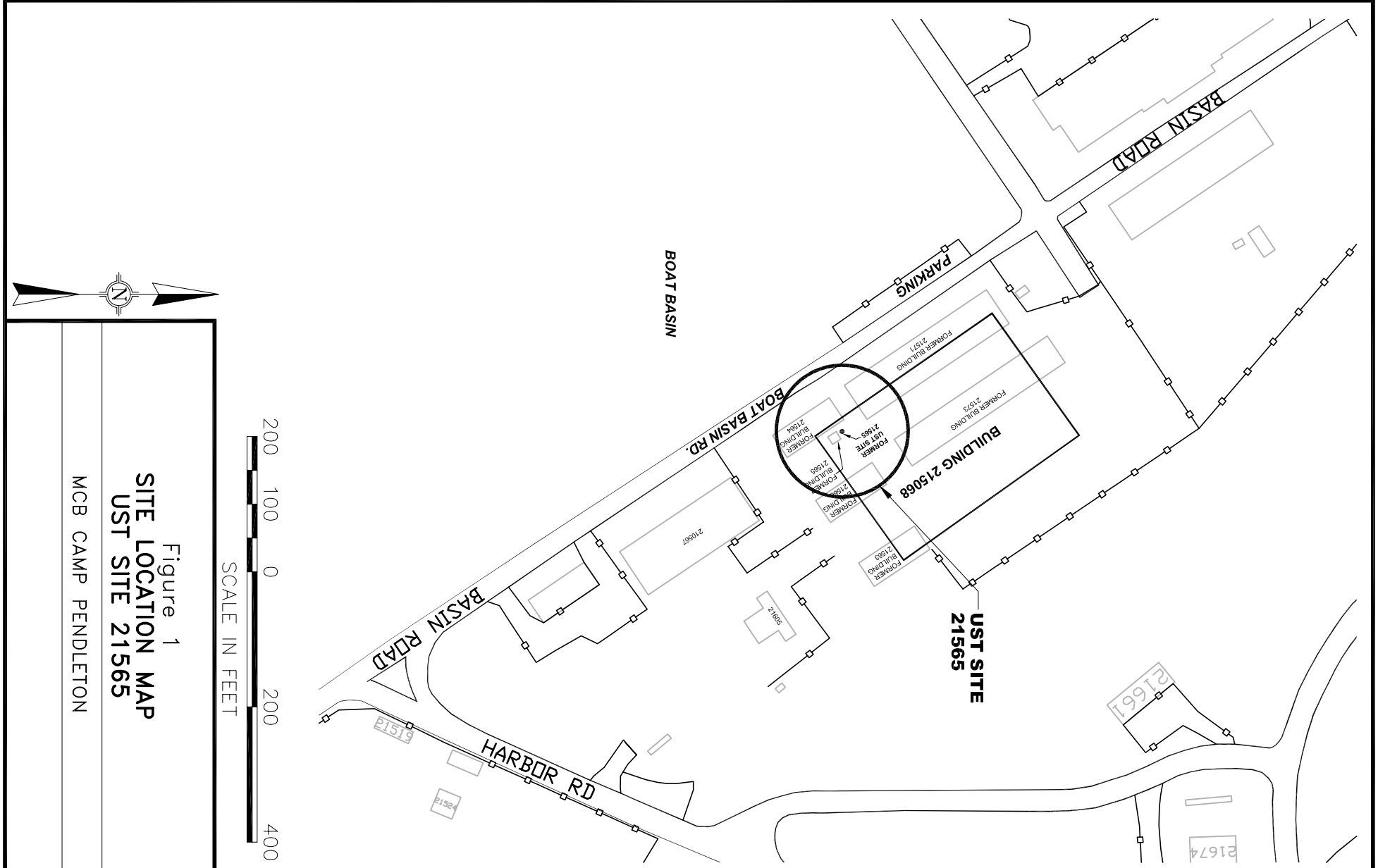

Figure 1
SITE LOCATION MAP
UST SITE 21565
MCB CAMP PENDLETON

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Figure 2
PROPOSED HYDROPUNCH SAMPLE LOCATIONS, UST SITE 21565

MCB CAMP PENDLETON

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